

B. THE CLAIMS

1-9. (Previously Cancelled)

10. (Previously Presented). A cartridge cassette for use with a surgical irrigation pump having a pumping actuator, the cartridge cassette comprising:

a pumping chamber in fluid communication with a source of fluid and an irrigation conduit, the pumping chamber being defined in part by a diaphragm, the diaphragm positioned to cooperate with a reciprocating pumping actuator;

means for removably connecting the cartridge to the surgical irrigation pump to establish working communication between the diaphragm and the reciprocating pumping actuator, the diaphragm being preloaded against the reciprocating pumping actuator;

an upstream valve disposed in the cartridge and in fluid communication with the source of fluid and the pumping chamber; and

a downstream valve disposed in the cartridge and in fluid communication with the irrigation conduit and the pumping chamber.

11. (Original). The cartridge cassette of claim 10, further including tubing assembly means for interconnecting the cartridge cassette and the source of fluid.

12. (Original). The cartridge cassette of claim 10, further wherein the upstream and downstream valves are a spring biased poppet valve disposed adjacent the inlet port and a spring biased poppet valve disposed adjacent the outlet port.

13. (Original). The cartridge cassette of claim 10, wherein the means for removably connecting the cartridge cassette to the surgical irrigation pump includes a tab-receiving recess connected with a tab-receiving groove in the cartridge cassette which is adapted to mate with a laterally outwardly projecting tab on the surgical irrigation pump to provide coupling of the cartridge cassette in the surgical irrigation pump.

14. (Cancelled).

15. (Cancelled).

16. (Presently Amended). The cartridge cassette of claim 10 [14], wherein the diaphragm has a constantly graduated cross-sectional thickness dimension such that the thickness dimension increases from a central portion of the diaphragm to radially outward portions of the diaphragm.

17. (Presently Amended). A cartridge cassette for use with a surgical irrigation pump having a pumping actuator, the cartridge cassette comprising:

a pumping chamber in fluid communication with a source of fluid and an irrigation conduit;

a tab receiving recess connecting with a tab-receiving groove in the cartridge cassette which is adapted to mate with a laterally outwardly projecting tab on the surgical irrigation pump to provide coupling of the cartridge cassette in the surgical irrigation pump to establish working communication with the pumping actuator;

an upstream valve disposed in the cartridge and in fluid communication with the source of fluid and the pumping chamber; and

a downstream valve disposed in the cartridge and in fluid communication with the irrigation conduit and the pumping chamber.

18. (Original). The cartridge cassette of claim 17, further including tubing assembly means for interconnecting the cartridge cassette and the source of fluid.

19. (Original). The cartridge cassette of claim 17, further wherein the upstream valve is a spring biased poppet valve.

20. (Original). The cartridge cassette of claim 17, further wherein the downstream valve is a spring biased poppet valve.

21. (Previously Presented). The cartridge cassette of claim 17, wherein the cartridge cassette includes a diaphragm positioned to cooperate with a reciprocating pumping actuator.

22. (Previously Presented). The cartridge cassette of claim 21, wherein in the mated position of the cartridge cassette in the socket, the diaphragm is preloaded against the reciprocating pumping actuator.

23. (Previously Presented). The cartridge cassette of claim 21, wherein the diaphragm has a constantly graduated cross-sectional thickness dimension such that the thickness dimension increases from a central portion of the diaphragm to radially outward portions of the diaphragm.

24. (Previously Presented). A cartridge cassette adapted to mate with a surgical irrigation pump to provide coupling of the cartridge cassette in the surgical irrigation pump to establish working communication with a pumping actuator, the cartridge cassette comprising:

- a pumping chamber;

- a flexible diaphragm covering the pumping chamber, the diaphragm has a constantly graduated cross-sectional thickness dimension such that the thickness dimension is composed of a constantly graduated increase from a central portion of the diaphragm to radially outward portions of the diaphragm;

- an upstream valve disposed in the cartridge adapted for fluid communication with a source of fluid and the pumping chamber; and

- a downstream valve disposed in the cartridge adapted for fluid communication with an irrigation conduit and the pumping chamber.

25. (Original). The cartridge cassette of claim 24, further including tubing assembly means for interconnecting the cartridge cassette and the source of fluid.

26. (Original). The cartridge cassette of claim 24, further wherein the upstream valve is a spring biased poppet valve.

27. (Original). The cartridge cassette of claim 24, further wherein the downstream valve is a spring biased poppet valve.

28. (Previously Presented). The cartridge cassette of claim 24, wherein in the mated position of the cartridge cassette in the surgical irrigation pump, the diaphragm is preloaded against a reciprocating pumping actuator.

29. (Cancelled).

30-57. (Previously Cancelled)